

65. A computer software product comprising:

computer program code that scans an area of a substrate having a plurality of different polymers of known sequence, wherein each type of polymer is on a localized areas that is smaller than 250000 microns<sup>2</sup>;

computer program code that receives pixel data from the scanner;

computer program code that collects pixel data to generate an average intensity over a given localized area [outputs the pixel data to an image data file]; and

a computer readable medium for storing the codes.

67. The computer software product of Claim 66 further comprising computer program code that outputs the pixel data to an image data file and displays the image data.

68. The computer software product of Claim 65 wherein the polymers are nucleic acids and the substrate is hybridized with a sample.

73. A system for acquiring data using a polymer scanner comprising:

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical steps comprising:

scanning an area of a substrate having a plurality of different polymers of known sequence, wherein each type of polymer is on a localized area that is smaller than 250000 microns<sup>2</sup>;

receiving pixel data from the scanner; and

collecting pixel data to generate an average intensity over a given localized area.

75. The system of Claim 74 wherein the logic step further comprises outputting the pixel data to an image data file and displaying the image data.

76. The system of Claim 75 wherein the polymers are nucleic acids and the substrate is hybridized with a sample.

78. A computer readable medium comprising computer executable instructions for performing a method comprising:  
scanning a polymer array to obtain a plurality of intensity data, wherein the polymer array has a plurality of different polymer probes of known sequence, wherein each type of polymer probe occupies a localized area less than 250000 microns<sup>2</sup>, and wherein the array has been contacted with a sample that may contain a target; and determining the positions of probe and target interaction based upon the intensity data and collecting pixel data to generate an average intensity over a given localized area.

81. The computer readable medium of Claim 80 wherein the intensity data reflects the hybridization of the oligonucleotide probes and the target.

82. The computer readable medium of Claim 78 wherein intensity data are florescence data.

83. The computer readable medium of Claim 78 wherein the substrate has at least 400 polymer probes per cm<sup>2</sup>.

84. The computer readable medium of Claim 78 wherein the substrate has at least 1000 polymer probes per cm<sup>2</sup>.

85. The computer readable medium of Claim 78 wherein the substrate has at least 10000 polymer probes per cm<sup>2</sup>.

86. A computer software product comprising:

computer program code that scans a polymer array to obtain a plurality intensity data, wherein the polymer array has a plurality of different polymer probes, of known sequence, wherein each type of polymer probe occupies a localized area less than 250000 microns<sup>2</sup>, and wherein the array has been contacted with a sample that may contain a target;

computer program code that determines the positions of probe and target interaction based upon the intensity data and the computer program code collects pixel data to generate an average intensity over a given localized areas; and  
a computer readable medium for storing the codes.

89. The computer software product of Claim 88 wherein the intensity data reflects the hybridization of the oligonucleotide probes and the target.

94. A system for acquiring data using a polymer scanner comprising:

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical steps comprising:

scanning a polymer array to obtain a plurality of intensity data, wherein the polymer array has a plurality of different polymer probes of known sequence, wherein each type of polymer probe occupies a localized area less than 250000 microns<sup>2</sup>, and wherein the array has been contacted with a sample that may contain a target; and

determining the positions of probe and target interaction based upon the intensity data and collecting pixel data to generate an average intensity over a given localized area.

102. A system for scanning a polymer array comprising:

a scanning optical device;

a polymer array having different polymers of known sequence wherein each type of polymer is in a localized area;

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical step collecting intensity data from less than  $\frac{1}{2}$  of each of the localized areas to generate an average intensity over a given localized area.

108. A computer readable medium comprising executable instructions for acquiring data from a polymer array, comprising:

scanning a substrate having a plurality of different polymers, of known sequence, wherein each type of polymer is in a localized area, having an area smaller than 250,000 microns<sup>2</sup>,

acquiring data which indicate binding between the polymer on the substrate and a detectable target polymer; and

collecting pixel data to generate an average intensity over a given localized area.

120. A computer software product comprising

computer program code that scans a substrate having a plurality of different polymers, of known sequence, at localized areas, each of which an area smaller than 250,000 microns<sup>2</sup>;

computer program code that acquires data which indicate binding between the polymer on the substrate and a detectable target polymer and collects pixel data to generate an average intensity over individual localized areas; and

a computer readable medium for storing the codes.

132. A computer readable medium comprising executable instructions for acquiring data from a polymer array, comprising:

scanning a substrate having a plurality of different polymers of known or detectable sequence at localized areas, each of which are smaller than 250,000 microns<sup>2</sup>; and

acquiring data which indicate binding between the polymer on the substrate and a detectable target polymer; and

collecting pixel data to generate an average intensity over a given localized area.

144. A system for controlling a polymer scanner comprising:

a processor; and a memory being coupled to the processor, the memory storing a plurality of machine instructions that cause the processor to perform a plurality of logical steps when implemented by the processor, the logical steps comprising:

scanning a substrate having a plurality of different polymers, of known or detectable sequence, at localized areas, each of which are smaller than 250,000 microns<sup>2</sup>; and

acquiring data which indicate binding between the polymer on the substrate and a detectable target polymer; and

collecting pixel data to generate an average intensity over a localized area.

Please add the following new claims- -

- - 156. An image file produced by the computer readable medium of claim 59.

157. An image file produced by the computer software product of claim 67.

158. An image file produced by the system of claim 75.- -

#### REMARKS

Claims 57-155 are currently pending. Applicants have added new claims 156 to 158. Applicants have elected Species I and Species A.